

REMARKS

In the Office Action, the Examiner noted that claims 1-61 are pending in the application, that claims 5-7, 17-19, 25-61 are withdrawn from consideration, and that claims 1-4, 8-16, 20-24 are rejected.

Rejections under 35 USC § 103(a)

Claims 1 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,069,178 to Amirav et al.

Amirav et al teaches an electrolysis system for use with gas chromatography equipment. Amirav shows an electrolysis device (1) which disassociates water to form a mixture of water vapor, mist, hydrogen gas and oxygen gas. Due to certain particularities of Amirav's application, a flow rate stabilization system (30) is provided to prevent water and potassium hydroxide (KOH) from entering the gas chromatography system. This stabilization system (30) includes a container (32) which allows water to drop out of the water-gas mixture. The dried gas exits the container (32) and proceeds through an absorption column (37) and exits to the gas chromatography equipment. In order to maintain a constant flow rate, Amirav includes a pair of frits (35, 36) which act to limit the flow rate of the gas and act to pressurize the upstream portion of the system. To further enhance the stability of the flow rate, Amirav includes a container (39) downstream from frit 35 and upstream from frit (36).

Independent claim 1 is directed to a system for monitoring combustible gas comprising, *inter alia*, "a second phase separator having an inlet and at least one outlet having a opening therefrom, said second separator inlet being fluidly connected to said first separator outlet."

Applicant respectfully submits that independent Claim 1 is not obvious in view of Amirav et al. In Examiner's rejection, Examiner states that Claim 1 is rendered obvious if the two phase separators 24, 28 shown in the prior art Figure 1 are combined in the manner taught by Amirav's connection between containers 32 and 39. Applicant respectfully disagrees. Applicant respectfully submits that Examiner may have misread teachings of Amirav. While the container 32 of Amirav is used for separation of water from the gas mixture (Column 4, Lines 20-25), it would be counter to the teachings of Amirav to use container 39 for this purpose. Container (39) in Amirav is used for *flow rate stability*

(Column 5, Lines 14-17) and not water separation. In support of Applicant's assertion, Applicant respectfully directs Examiner's attention to Column 4, Line 62-66 where Amirav states that the frit (35), which is located upstream from container (39) needs protection from water mist. Applicant respectfully submits that if container (39) was a phase separator as required in independent Claim 1, then Amirav would have located the container upstream from the frit (35).

Additionally, Applicant respectfully submits that container (39) further could not be a phase separator within the meaning of the present invention since container (39) as shown in Figure 1 of Amirac does not have an inlet and an outlet as required by independent Claim 1. As described in paragraph [0042] of the present invention, in order for water entrained in a gas stream to condense, it must experience a pressure drop in the phase separator. Applicant respectfully submits that since the container (39) of Amirav simply passes the gas over the container (39) and the pressure drop required to provide phase separation is not present.

Applicant respectfully submits that the combination the prior art shown in Figure 1 of the present application with Amirav et al would not result in a system that is capable of monitoring combustible gas. As described in paragraph [0029] of the present application, the gas being monitored needs to have a reduced level of relative humidity to operate effectively. Applicant respectfully submits that container (39) of Amirav is not a phase separator therefore it could not operate to reduce the relative humidity of the gas stream. Since the resulting combination would not perform to the desired result of drying the gas stream, there would be no motivation by one of ordinary skill in the art to combine the cited references. Accordingly, reconsideration and allowance of Claim 1 is respectfully requested.

Applicant respectfully submits that independent Claim 13 is not obvious in view of Amirav et al. Independent claim 13 is directed to a system for monitoring combustible gas comprising, *inter alia*, "a first phase separator having an inlet and at least one outlet, said inlet being connected to said *cell stack oxygen outlet*" (emphasis added).

As described in paragraphs [0006] and [0007] of the present application, the electrochemical cell 18 produces two gas streams. Each of the gas streams enters a separate phase separator, namely a hydrogen phase separator 24 and an oxygen phase separator 28. Examiner states that it would have been obvious for one skilled in the art to connect the hydrogen phase separator 24 with the oxygen phase separator 28 using the connection taught

by Amirav. Applicant respectfully disagrees. If this purported connection were made between the two phase separators, this would result in oxygen gas being mixed with hydrogen gas. Clearly, this would result in an ineffective system since the combustible gas sensor required by Claim 13 is monitoring for the presence of hydrogen in the oxygen gas stream. By mixing the two gas streams together, the combustible gas sensor would continually measure an undesirable gas mixture.

Additionally, the arguments put forth above with respect to Claim 1 apply to Claim 13 as well. Since the combined system would not function in the same manner as Independent Claim 13, there would be no motivation for one skilled in the art to combine the prior art shown in Figure 1 with Amirav. Accordingly Applicant respectfully requests reconsideration and allowance of Claim 13.

For the same reasons set forth above with respect to Claim 1 and Claim 13, Applicant respectfully submits that the rejections of dependent Claims 2-4, 8-12, 14-16 and 20-24 which depend directly or indirectly from Claim 1 and Claim 13 and incorporate all of the limitations of Claim 1 and Claim 13 are improper. Therefore, applicants submit that Claims 2-4, 8-12, 14-16 and 20-24 patentably define over Amirav in view of Whynall. Accordingly, reconsideration and allowance of Claims 2-4, 8-12, 14-16 and 20-24 is respectfully requested.

Conclusion

For the reasons advanced above, Applicant respectfully submits that the application is in condition for allowance and that action is earnestly solicited.

If there are any additional charges with respect to this Reply or otherwise, please charge them to Deposit Account No. 503125 maintained by applicants' agent.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account 503125

Respectfully submitted,

EDWARD DEMAREST, ET AL.

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